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10/713,035

11/17/2003

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07/03/2008

EXAMINER

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ART UNIT

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2132

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|---------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/713,035 | Applicant(s) D'SOUZA ET AL. | |
| | Examiner ABDULHAKIM NOBAHAR | Art Unit 2132 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to applicants' amendment filed on 03/12/2008.
2. Claims 1-3 and 5-8 are pending.
3. Claims 7 and 8 are newly added.
4. Claim 4 cancelled.
5. Claims 1-3, 5 and 6 are amended.
6. Applicant's arguments have been fully considered but they are not persuasive.

Response to Arguments

1. Applicants with regards to the Double Patenting rejection on page 8 of the remarks argue that "The claims of the copending application recite using "statistics" on incoming and outgoing calls and taking action to mitigate unsolicited calls. The claims do not recite either detection of DoS attacks or comparing INVITE messages with Ringing messages, and the disclosure of the copending application makes clear that the invention involves neither DoS attacks nor Ring messages. In fact, the claims of the copending application are directed to an entirely different and at best tangentially-related invention, and recite none of the features claimed in the present application. Accordingly, the double patenting rejection is believed to be improper".

Examiner respectfully disagrees and asserts that the instant claim1 is substantially the same as copending claim 1 for the following reasons:

- a) The copending claim 1 recites "comparing the total of said incoming messages to said outgoing messages of each setup and termination message type for a given user" which is substantially the same as "detecting an imbalance between an accounting of

said SIP INVITE and SIP 180 Ringing messages resulting from a denial of service attack” recited by the instant claim 1. Because the SIP INVITE messages are the incoming messages from a user requesting a call session and the SIP 180 Ringing messages are one of the three kinds of outgoing messages in a SIP communication (outgoing messages: SIP 180 Ringing messages, SIP 100 TRYING messages and SIP 200 OK messages) that the requesting user receives for each requesting message (see, for example, March et al, 2003/043740, paragraphs [0064]-[0066] and other related literatures to session initiation protocol (SIP) for voice and multimedia communications). Therefore, detecting an imbalance between an accounting of SIP INVITE and SIP 180 Ringing messages is the same as comparing the total of said incoming messages to said outgoing messages.

b) The copending claim 1 recites “responding to a statistically significant imbalance in the comparison of both types of message statistics for the given user, taking an action to mitigate unsolicited calls from that user”, which is the same as “providing an indication of the presence of a current DoS attack on said proxy server based on detection of said imbalance” recited by the instant claim 1. Because “responding to...” is equivalent to “providing an indication of...” and “unsolicited calls from that user” is the same as “current DoS attack on said proxy server”.

2. Applicants with regards to the rejection of claims under 35 U.S.C. 102(e) on pages 8 and 9 of the remarks argue that “The “rate” of incoming data units exceeding a threshold is clearly not the same or analogous to the claimed imbalance between set-

ups (INVITE messages) and rings (Ringing messages), nor is the matching a "pattern" of incoming data units suggestive of the claimed imbalance".

Examiner respectfully disagrees and asserts that one of the most common types of the DoS attacks is when a user sending excessive messages to a boarder system in a network such as a proxy server, a firewall, a gateway or any device that controls the incoming messages in order to flood the border system rendering it unavailable. In a SIP communication, for each receiving message (i.e., an INVITE message) the boarder system tries to send a SIP 180 Ringing message (i.e., one of the three types of outgoing message). If the number of INVITE messages is too large, the boarder system will become very busy to respond to them and cannot respond to legitimate requests. The flooding scheme in a DoS attack can be expressed either by stating that the number of incoming messages is too high (i.e., the rate of the incoming messages is high or more than expected or more than a threshold) so that the receiving boarder system is inundated with messages or stating that the difference between the incoming messages and the outgoing messages is very large (i.e., the number of the incoming messages is too high and the number of outgoing messages is too little), which are the same. Therefore, if March compares the rate of the INVITE messages against a predefined threshold to detect a DoS attack it would be the same as if it subtracts the number of SIP 180 Ringing messages from the INVITE messages to detect a DoS. Because in a non-DoS SIP communication the number of INVITE messages is equal to the number of SIP 180 Ringing messages (see, for example, the descriptions of Fig. 3 in March).

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3. Examiner, however, in light of the above submission maintains the previous rejections while considering the amendments to the claims and added new claims as follows.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 5 and 6 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 4 and 10-12 of copending Application No. 10/849,830. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of this application are broader than the claims 1 and 10 of the copending application. For example, the claims of the instant application do not expressly specify that collecting statistics on incoming and outgoing call setup and termination signaling message types on a per user basis in a given time period. In general, the combined limitations of claims 1, 2 and 4 and the combined limitations of claims 10-12 of the co-pending application correspond to the limitations of claims 1, 5 and 6 in the instant application. The co-

pending claims 2 and 11 recite that a proxy server collects the statistics of messages and the co-pending claims 4 and 12 recite the use of a Session Initiation Protocol (SIP). These limitations correspond to “having at least one proxy server incorporating a Session Initiation Protocol (SIP)” in the claims 1, 5 and 6 of the instant application. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

Claims 1-3 and 5-8 are rejected under 35 U.S.C. 102(e) as being anticipated by March et al (2003/043740; hereinafter March).

Regarding claim 1, March discloses:

A method of detecting denial of service (DOS) attacks (see Fig. 7, paragraphs 0029 and 0097) in an Internet accessible network having at least one proxy server (see paragraph 0018 and 0020) incorporating a session initiation protocol (SIP), said session initiation protocol includes INVITE (INV) messages that request set-up of an Internet telephone call and SIP 180 messages indicate ringing (see paragraph 0025), comprising the steps of: detecting an imbalance between an accounting of said SIP INVITE and SIP 180 Ringing messages resulting from a denial of service attack (see paragraphs 0005, 0029 and 0097); and providing an indication of the presence of a current DoS attack on said proxy server based on detecting of said imbalance (see Fig. 7, block 616 and paragraphs 0029, 0101 and 0103) .

Regarding claim 2, March discloses:

The method of detecting denial of service attacks in an Internet accessible network as defined in claim 1 wherein the number (H) of INVITE messages (see paragraphs 0005, 0038 and 0100) including credentials that are sent from a user client in response to an authentication required (407) message from the proxy server (see Fig. 3, paragraphs 0066 through 0072 and 0085), said credentials being information used by the proxy server to authenticate the INVITE messages (see paragraphs 0102 and 0103, where the identifier corresponds to the recited credentials), are removed from the accounting before the balance is tested such that the equation:

$$INV_o + INV_c - H = N_{180}$$

where INV_o is the number of INVITE messages without said credentials, INV_c is the number of INVITE messages with said credentials, and N_{180} is the number of said 180 messages, is not true within a predetermined margin of error (see paragraphs 0029, 0097, 0100 and 0101, where the rate of incoming messages, the traffic pattern and the threshold are the indication of a balance between the incoming messages and Ok outgoing messages) then the presence of a denial of service attack on the proxy server is indicated by the inequality (see paragraphs 0005 and 0103).

Regarding claim 3, March discloses:

The method of detecting denial of service attacks in an Internet accessible network as defined in claim 2 further including causing said proxy server to maintain a call information table for determining the value of H (see paragraphs 0028 and 0036).

Regarding claim 5, March discloses:

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A system for detecting denial of service attacks against session initiation protocol elements in an Internet accessible network having at least one proxy server, wherein said proxy server for determining if the number of INVITE messages including credentials (INVc) sent to said proxy server from user clients (see paragraphs 0005, 0038 and 0100) in response to an authentication requirement exceeds a predetermined level that indicates a DoS attack (see Fig. 3, SIP 200 OK message 324 and ACK message 326), said credentials being information used by the proxy server to authenticate the INVITE messages (see paragraphs 0102 and 0103, where the identifier corresponds to the recited credentials).

Regarding claim 6, March discloses:

A system for detecting denial of service attacks in an Internet accessible network having at least one proxy server (see paragraph 0018 and 0020) incorporating session initiation protocol (SIP) (see paragraph 0025), wherein said proxy server includes means for detecting an imbalance between an accounting of SIP INVITE and SIP 180 Ringing messages (see paragraphs 0005, 0029, 0065 and 0097) that indicates the presence of a current denial of service attack on said proxy server (see paragraphs 0005 and 0103).

Regarding claim 7, March discloses:

A system for detecting denial of service attacks against session initiation protocol elements in an Internet accessible network as claimed in claim 5, wherein said means creates a call-info table for use in tracking said INVITE messages (see paragraphs 0028, 0036 and 0097).

Regarding claim 8, March discloses:

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A system for detecting denial of service attacks against session initiation protocol elements in an Internet accessible network as claimed in claim 6, wherein said means creates a call-info table (see paragraphs 0028, 0036 and 0097).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **ABDULHAKIM NOBAHAR** whose telephone number is (571)272-3808. The examiner can normally be reached on M-T 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system.

/Abdulhakim Nobahar/
Examiner, Art Unit 2132

June 26, 2008

/Gilberto Barron Jr/
Supervisory Patent Examiner, Art Unit 2132